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U. S. Department of Agriculture

HOUSEKEEPERS' CHAT Saturday, November 7, 1936

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Subject: "NEWS NOTES ON ELECTRICITY FOR COOKING." Information from the Office of Experiment Stations, United States Department of Agriculture.

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Household engineers at experiment stations in 2 States have lately been investigating cooking by electricity, especially the cost of this comparatively new cooking fuel. Some of their findings are reported in today's letter from the Department of Agriculture.

Writes our correspondent in Washington, D. C.: "Up in Maine, over in Indiana -- in fact, all across the country, housewives are interested in electricity for cooking. So up at the Maine Experiment Station and over at the Indiana Station, investigators have lately been looking into the matter from the housewife's point of view, considering problems like cost and kilowatt-hours and also comfort and convenience.

"As a result of research in Indiana, the investigators there report: 'Electric energy for cooking is safe, clean and efficient and is becoming more popular in rural Indiana homes with the decrease in electric rates and recent improvements in electric ranges. Cooking rates are available from 2-1/2 to 3 cents a kilowatt-hour in most localities in the State. These rates make electricity compare very favorably with fuels in common use. Records kept for a year of energy consumption for cooking in 20 Indiana farm homes showed an average of 116 kilowatt-hours a month, varying from 53 kilowatt-hours in a family of 2 to 318 in a family of 11.'

"If my arithmetic is correct, that makes the cost of cooking by electricity in Indiana farm homes average 3 dollars and 48 cents a month, varying from 1 dollar and 59 cents for a family of 2 to 9 dollars and 54 cents for a family of 11.

"The Maine investigators seem to agree with those in Indiana in their findings of the cost of electric cooking in farm homes in Maine. They say: 'The budget should allow from 3 to 6 dollars per month for heat for cooking purposes, assuming that the average rate paid for electricity is 3 cents per kilowatt-hour. With higher or lower rates, the bills will vary accordingly.'

"Indiana and Maine studies both show that the way the housewife manages her electric range has much to do with the size of the electric bill at the end of the month. Indiana reports: 'The homemaker largely controls the amount of electricity used for cooking by her care in handling equipment. Two identical ranges on which records were obtained in one locality in Indiana were operated by women cooking for the same size families. One woman used an average of 51 kilowatt-hours a month while the other used 97 kilowatt-hours.' And Maine says: 'Careful attention to cooking habits is necessary if the electric bill is to be kept within budget limits.'

"Maine investigators then go on to tell the ways they have found most effective in saving electricity. One way is to turn the switch to a lower heat as soon as boiling begins. The explain that high wattage of a surface unit is only necessary to bring food up to boiling. As soon as boiling begins, you can use low, or at least medium wattage to hold the boiling temperature. You can, that is, if you have a lid on the kettle. This is why the investigators at Maine suggest that lids save electricity and advise covering all food during boiling except those vegetables that have better flavor and color if cooked in an open kettle. They also find that in a covered kettle, vegetables will come to a boil most quickly if you use the minimum of water. Still another means of saving electricity is to cook more than one food in the oven at a time, to plan a whole oven meal if you are going to bake any one food. In fact, they say to make the most of every unit while it is hot.

"Maine investigators have also found out a good deal about cooking utensils to save electricity. They find that the most economical kettle is not only covered, but also has straight, not flaring sides and a flat bottom that covers the heated surface of the unit but does not go too far beyond. It is made of heavy enough material so that it will not warp with heat. They report that the difference in the cost of using a flat-bottom pan 4 times a day versus one with a considerably bulged bottom may amount to from 3 to 6 dollars a year with electricity at 3 cents a kilowatt-hour.

"Pans made with flat bottoms, black bottoms, rough bottoms, and shiny bottoms all had the attention of the Maine investigators. And these investigators found that the bottom of the pan may or may not affect the cost of cooking by electricity, depending on the kind of unit the stove has. On closed units, flat bottoms are especially necessary for saving heat; on more open units like the chromalox, corox, and calrod units, reasonably flat bottoms are best. If the stove has calrod, electrocene or open units, black bottoms on aluminum pans save electricity but black bottoms on enamelware don't. With calrod or open units, shining polished aluminum pan-bottoms may cost 2 dollars a year more than black-bottomed pans, but rough, dull bottoms do not raise the cost of cooking. As I understand it, this question of shiny versus dull, or bright versus black, is all a matter of reflecting or absorbing heat. Polished surfaces reflect heat -- or turn it off from the kettle -- so necessitate the use of more electricity.

"While I am still on the subject of cooking utensils, let me tell you that though the Maine study showed that lids on pans definitely saved electricity, it also showed that lids with special devices for holding in the steam were not worth extra money.

"So much for cost. Now a point or two about comfort and convenience, brought out by the studies in these 2 States. The Indiana investigators find that an electric stove, because of the insulation of the oven, makes a cooler and more comfortable kitchen in summer. But they suggest that if the range must heat the kitchen in winter, a combination coal or wood and electric range is a good choice. And the Maine investigators make a point about the arrangement of the range for convenience. They say that an electric range with the oven placed at the side of the cooking surface, high enough to make stooping unnecessary, is more convenient than a table-top range with the oven placed under the cooking surface -- that is, down near the floor.

"A last point about the convenience of an electric range comes from the Indiana investigators who report that when electricity is used for cooking, the average time required in the care and handling of the range is only 26 minutes a week. But they say that with a coal and wood range, Indiana housewives averaged over 3 hours a week in kindling fires, carrying fuel, removing ashes and cleaning."

That concludes our Washington correspondent's notes on electric cooking taken from studies made recently at the Maine and Indiana Experiment Stations and reported to the Federal Office of Experiment Stations.

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